

AMENDMENTS TO THE CLAIMS

Please add claims 29-31 as follows.

1 - 13. (Cancelled).

14. (Previously Presented) A semiconductor device comprising:

a semiconductor substrate;

a MOS type transistor formed on said semiconductor substrate, said MOS type transistor including a source, a gate and a drain;

an interlayer insulating film formed on the semiconductor substrate, said interlayer insulating film covering said MOS type transistor and including a hydrogen resident film which is a silicon oxide film containing a Si-H residue of 61% or less;

a wiring layer formed on said interlayer insulating film; and

a hydrogen transmission preventing film covering said MOS type transistor and said wiring layer.

15. (Original) A semiconductor device according to claim 14, wherein said hydrogen resident film contains hydrogen silsesquioxane resin.

16. (Original) A semiconductor device according to claim 14, wherein said hydrogen transmission preventing film includes a silicon nitride film.

17. (Original) A semiconductor device according to claim 14, wherein said wiring layer has a lamination structure of Ti/Al alloy/TiN.

18. (Original) A semiconductor device according to claim 14, wherein said wiring layer has a lamination structure Ti/Al-Si-Cu alloy/TiN.

19. (Previously Presented) A semiconductor device comprising:

a semiconductor substrate;

a MOS type transistor formed on said semiconductor substrate, said MOS type transistor including a source, a gate and a drain;

an interlayer insulating film formed on the semiconductor substrate, said interlayer insulating film covering said MOS type transistor and including a hydrogen resident film;

a wiring layer formed on said interlayer insulating film, wherein said wiring layer includes a plurality of adjacent wiring layers; and

a hydrogen transmission preventing film covering said MOS type transistor and said wiring layer, and wherein said hydrogen transmission preventing film forms an air filled groove between adjacent wiring layers.

20. (Original) A semiconductor device according to claim 15, wherein a silicide film is formed on the source, the gate and the drain.

21. (Original) A semiconductor device according to claim 14, wherein a hydrogen supply path for supplying the channel region of the MOS type transistor is formed between the channel region and said hydrogen resident film.

22. (Previously Presented) A semiconductor device comprising:

a silicon substrate;

a MOS transistor having a gate insulating film formed on the silicon substrate, a silicon gate electrode formed on the gate insulating film, source/drain regions formed in the silicon substrate on both sides of the silicon gate electrode, and silicide layers formed on the silicon gate electrode and the source/drain regions;

an interlayer insulating film formed on the silicon substrate, covering the MOS transistor, and including a hydrogen containing film;

a wiring layer formed on the interlayer insulating film; and

a hydrogen shielding film formed on the interlayer insulating film, covering the MOS transistor and the wiring layer.

23. (Previously Presented) The semiconductor device according to claim 22, wherein the hydrogen-containing film contains hydrogen silsesquioxane resin.

24. (Previously Presented) The semiconductor device according to claim 22, wherein the hydrogen shielding film includes a silicon nitride film.

25. (Previously Presented) The semiconductor device according to claim 22, wherein the wiring layer includes a lamination of a Ti layer, an Al alloy layer, and a TiN layer.

26. (Previously Presented) The semiconductor device according to claim 22, wherein the wiring layer includes a lamination of a Ti layer, an Al-Si-Cu alloy layer, and a TiN layer.

27. (Previously Presented) The semiconductor device according to claim 22, wherein the wiring layer includes a plurality of wiring patterns, and the hydrogen shielding layer forms recessed surfaces between adjacent ones of the wiring patterns.

28. (Previously Presented) The semiconductor device according to claim 22, wherein the interlayer insulating film constitutes a hydrogen supply path between the hydrogen-containing film and the silicon substrate under the gate insulating film.

29. (New) A semiconductor device according to claim 14, wherein said silicon oxide film contains a Si-H residue of 23% or more.

30. (New) A semiconductor device according to claim 14, wherein said hydrogen resident film can release hydrogen by being heated at a temperature determined from hydrogen release characteristics of said silicon oxide film.

31. (New) A semiconductor device comprising:

a semiconductor substrate;

a MOS transistor formed on said semiconductor substrate;

an interlayer insulating film formed on the semiconductor substrate, said interlayer insulating film covering said MOS transistor and including a hydrogen resident film, wherein said hydrogen resident film has temperature dependent hydrogen release characteristics and can supply hydrogen by being heated at a temperature determined from said hydrogen release characteristics so as to lower interfacial energy levels of a channel region of said MOS transistor;

a wiring layer formed on said interlayer insulating film; and

a hydrogen transmission preventing film covering said MOS transistor and said wiring layer.